DAA - 4

# INPUT:

def knapsack(values,weights,capacity):

dp = [[0 for i in range(capacity+1)] for j in range(len(values)+1)]

for item in range(1,len(values) + 1):

for weight in range(1,capacity + 1):

if weights[item - 1] <= weight:

dp[item][weight] = max(dp[item-1][weight-weights[item-1]]+values[item-1],dp[item- 1][weight])

else:

dp[item][weight] = dp[item-1][weight] return dp[-1][-1]

while True:

print("Press Ctrl+C to terminate...") n = int(input('Enter number of items: ')) values = [int(i) for i in input("Enter values of items:").split(" ")] weights = [int(i) for i in input("Enter weights of items:").split(" ")] capacity

= int(input("Enter maximum weight: ")) maximum\_value = knapsack(values,weights,capacity) print('The maximum value of items that can be carried:', maximum\_value)

# OUTPUT:

**Enter number of items: 4**

**Enter values of items: 12 45 60 13**

**Enter weights of items: 5 3 2 10 Enter maximum weight: 22**

**The maximum value of items that can be carried: 130**